

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

UTILITY PATENT APPLICATION FOR:

**METHOD FOR AUTOMATICALLY COMPLETING
AN ELECTRONIC FORM**

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METHOD FOR AUTOMATICALLY COMPLETING AN ELECTRONIC FORM

FIELD OF THE INVENTION

This invention relates generally to entry of data on electronic forms, and more particularly to automating and simplifying such data entry.

BACKGROUND OF THE INVENTION

Prior to the widespread use of computers, information forms were filled out by hand, and contained specific spaces for entering specific information. For example, a typical product registration form might have contained spaces for name, address, telephone number, age, income range, type and number of cars owned, hobbies, etc. With the proliferation of computers into virtually every aspect of society, completion of forms, in an electronic form on a computer has become a common practice. These computerized forms often include many different blanks for users to fill out

Electronic forms have been adapted for various uses. The advent of the internet has made commercial transactions via the computer a reality. Such commercial activity is referred to as electronic commerce (or, e-commerce). Electronic forms play a prominent role in e-commerce. A typical e-commerce transaction may proceed as follows: A user or customer visits a website where products, such as computers for example, are sold. The user browses the website that may contain information, including price, on a plurality of products. Such a presentation of products 110, 120, 130 and 140 on a website is illustrated in Figure 1(a). Additional details or information on products may be accessed by clicking on a hyperlink such as one of the hyperlinks 115, 117 and 119 for example (or by clicking on a button in some settings). An example of such additional information is illustrated in Fig 1(b) and may also include technical specifications, special sales, etc. The user may then wish to purchase one or more of the products offered for sale on the website as illustrated in Figure 1(c). A product may be selected (using a mouse for example) by the user to indicate an intent to buy the selected product(s) as illustrated in Figure 1(c). As

1 a user selects products for purchase, they may be displayed to the user in a format that
2 may be visually similar to a spreadsheet or the like as illustrated in Figure 1(d). A
3 quantity of the selected product, if greater than one, may also be selected as illustrated in
4 Figure 1(d). A user's information also has to be entered for identification and shipping
5 purposes for example as illustrated in Figure 1(e).

6
7 Figure 2(a) illustrates a conventional electronic form for entering user information.
8 User information typically includes name, address, city, state, zip, telephone number, e-
9 mail address, etc. A separate form, such as that illustrated in Figure 2(b) for example,
10 may be used to store a user's credit card/payment information and other personal
11 information. Other personal information may include, but is not limited to, social security
12 number, blood type, mother's maiden name, etc. Personal information is confidential and
13 is usually provided only by the user or with the user's consent. Such personal
14 information is submitted via a secure connection in order to prevent others from accessing
15 it (i.e., the personal information). On the other hand, more general information about a
16 user (or a customer) such as name, address, etc. may more readily and easily be available
17 from sources other than the user.

18
19 Some regular or repeat customers of a particular vendor website may choose to
20 have their information stored in a vendor database during an initial purchase or visit so
21 that this information need not be provided again on a subsequent visit. Vendors typically
22 provide a user with the option of storing the user's general (and, even confidential
23 personal) information at their respective website (referred to herein as a company or
24 vendor website). The forms used for entering such information may resemble those
25 illustrated in Figures 2(a) and 2(b). While this approach provides some relief to users who
26 visit a particular website frequently, visits to multiple websites still require repeated entry
27 and submission of user information. For users who browse and purchase products or
28 services from several companies' websites, however, the process of repeatedly having to
29 provide the more general information to various websites becomes a burdensome task.

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2 SUMMARY OF THE INVENTION
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4 In one aspect, the invention is a method for automating portions of a data entry
5 process. The method comprises entering of information by a user at a first location,
6 accessing a storage medium at a second location that contains information for a plurality
7 of users, utilizing the entered information to identity a user corresponding to the entered
8 user information and retrieving additional information pertaining to the user from the
9 storage medium based on the determined identity.
10

11 In other aspect, the invention is a method and a system for eliminating repeated
12 entry of user information at a plurality of locations. The system comprises a first website
13 corresponding to a vendor of products or services, a second website having a storage
14 medium containing information corresponding to a plurality of individuals, a network; and
15 a user station connected to a network, the first website comprising a software application
16 being programmable to communicate with the second website and to search and to
17 retrieve information from the storage medium at the second website in response to
18 information entered through a user interface at the first website
19

20 In yet another aspect, the invention is a method for providing a user with control
21 over what information pertaining to the user is to be transmitted over a network.
22

23 In comparison to known prior art, certain embodiments of the invention are
24 capable of achieving certain aspects, including some or all of the following: (1) methods
25 and apparatus are capable of converging to a better solution than prior art solutions; and
26 (2) the methods and apparatus are capable of performing some tasks more easily than
27 possible before. Those skilled in the art will appreciate these and other advantages and
28 benefits of various embodiments of the invention upon reading the following detailed
29 description of a preferred embodiment with reference to the below-listed drawings.
30

BRIEF DESCRIPTION OF THE DRAWINGS

Figures 1(a) - 1(e) illustrate a typical electronic commerce transaction between a customer and a vendor website where products and information from the vendor are offered for sale;

Figures 2(a) and 2(b) illustrate conventional electronic forms for entering general information and personal information for a user;

Figure 3 illustrates a respective relationship between the various websites and a customer according to exemplary embodiments of the present invention; and

Figure 4 illustrates a method for automating entry of customer information according to exemplary embodiments of the present invention.

DETAILED DESCRIPTION OF A PREFERRED EMBODIMENT

At least the shortcomings highlighted above may be overcome by exemplary embodiments of the invention.

Existing systems facilitate centralized storage of information for multiple individuals. This information may be stored in a database for example. There are at least two examples of websites that facilitate storage and maintenance of such systems. These websites are <http://www.switchboard.com> and <http://www.people.yahoo.com>. Each of these systems provide users with the ability to enter and edit or modify general information about themselves. This information may then be saved (stored). Once this information is stored, it may be accessed by other users who may log onto these websites and retrieve information about an individual by entering a last name, for example. These websites make this information available to the public much like a directory. Any

1 information provided by an individual to these websites is available to the public if the
2 individual's last name is known and entered. These websites may be referred to herein as
3 data websites.

4
5 According to exemplary embodiments of the present invention, information stored
6 at the data websites may be accessed from or by the vendor websites. Data websites such
7 as website 320 of Figure 3 may be connected to the Internet 300 along with vendor
8 websites such as vendor website 330 and a user (or customer) 310 as illustrated in Figure
9 3. The user 310 may interact with the data and vendor websites 320 and 330 via an
10 interface such as a keyboard, a mouse, a graphical user interface or the like.

11
12 Communication between the respective websites (i.e., vendor 330 and data 320) is
13 facilitated by a software application 335 at the vendor website 330. This software may be
14 a browser plug-in module, for example. A typical visit by a customer 310 to a vendor
15 website 330 (or, browsing on the vendor website 330) may include the following
16 interaction between the user/customer 310 and the vendor website 330 according to
17 exemplary embodiments of the present invention. Upon selecting a number of items or
18 services for purchase from a vendor, the customer 310 encounters a form containing fields
19 for entering the customer's general information similar to that illustrated in Figure 1(e).

20
21 A method for automating entry of a customers or user information according to
22 exemplary embodiments of the present invention is illustrated in Figure 4. The user or
23 customer 310, at step 410, may begin entering information such as an e-mail address, last
24 name, zip code, etc. Upon entry of a predetermined, minimum number of required fields,
25 the browser plug-in module 335 (of Figure 3), at 415, may initiate a search of a database
26 associated with the particular vendor website 330 such as vendor database 340 in order to
27 determine the customer's identity. The minimum information required may be set to
28 include last name and zip code. If an e-mail address is used as the identifying
29 information, this one field may be adequate as an e-mail address is deemed to be unique to
30 a particular user. In searching for a user (or, customer) identification in the vendor

1 database, the module 335 may locate one matching customer or a number of matching
2 customers using the information entered at step 410. If the module 335 determines that a
3 match is found within the vendor's database at 420, then the module has to determine
4 whether there are multiple matches at step 425. If there are multiple matches, then the
5 multiple matches are presented to the customer at step 430. If there is only one matching
6 information on the other hand, the matching information is presented at step 435. The
7 presented information (either from step 430 or 435) is verified for accuracy at step 440. If
8 the information is correct, the customer checks the fields that the customer wishes to
9 submit at step 465. If the customer determines that the information is not correct, the
10 customer is prompted to enter accurate (or, additional) information at 470.

11
12 If, on the other hand, no match is found within the vendor database at 420, the
13 module 335 may then initiate communication with the data website 320 at 445 in order to
14 determine the customer's identity. The plug-in module 335, using the information entered
15 in the minimum number of fields, searches an archival (or, storage) medium 325 (of
16 Figure 3) of the data website 320 (of Figure 3) at 450 to obtain additional information
17 about the customer 310. If the module 335 determines at 455 that a match is found, then
18 the module has to determine whether there are multiple matches at step 460. If there are
19 multiple matches, then the multiple matches are presented to the customer at step 430. If
20 there is only one matching information on the other hand, the matching information is
21 presented at step 435. The presented information (either from 430 or 435) is verified for
22 accuracy at step 440. If the information is correct, the customer checks the fields that the
23 customer wishes to submit. If the customer determines that the information is not correct,
24 the customer is prompted to enter accurate (or, additional) information at 470.

25
26 If the module determines at 455, that no match for the customer has been found,
27 the customer is prompted to enter accurate (or, additional) information at 470.

28
29 In addition to selecting fields to submit, the customer may be provided with an
30 option to select only those fields of information that the customer wishes to transmit to the

1 vendor at 465. In order to achieve this selective transmission of information, a check box
2 may be placed next to each field. The customer may check the boxes that correspond to
3 the type of information that the customer wishes to transmit. For example, a customer
4 may not wish to provide demographic information to some vendors or telephone number
5 to other vendors. The information presented to the user at 430 (and/or 435) may be more
6 extensive than that which is needed to process a customer's purchase order. For example,
7 the information may include demographic information about the customer such as age
8 range, household income level, number of cars owned, etc. In an alternative arrangement,
9 a user may be given an opportunity to check one box to transmit all information that is
10 presented. It is to be understood that a customer cannot refuse to transmit information that
11 is required. Once the customer information is entered at 470 or when the customer has
12 verified the accuracy of the located information at 440 and selected fields for submission
13 at 465, the information is submitted at 475. Payment information may be obtained at 480
14 and the transaction is processed at 485.

15
16 While a vendor website in the present invention has been described as that of a
17 particular company, etc. offering its products and services for sale, it could also be a
18 website where products and services from multiple vendors and/or companies may also be
19 offered.

20
21 By communicating with a data website as described, the present invention makes
22 the process of providing customer information less burdensome to the customer.

23
24 Exemplary embodiments of the present invention may be realized on a system that
25 includes vendor websites and data websites as described and the internet. Customers that
26 visit multiple websites to conduct commercial transactions may now store their
27 information at a central location from which it may be obtained by a plurality of vendor
28 websites. These central data websites also have an incentive to facilitate such storage as
29 an extensive collection of user information leads to increase advertising revenue for the
30 data websites.

1
2 What has been described and illustrated herein is a preferred embodiment of the
3 invention along with some of its variations. The terms, descriptions and figures used
4 herein are set forth by way of illustration only and are not meant as limitations. Those
5 skilled in the art will recognize that many variations are possible within the spirit and
6 scope of the invention, which is intended to be defined by the following claims -- and their
7 equivalents -- in which all terms are meant in their broadest reasonable sense unless
8 otherwise indicated.